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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/661,666

09/12/2003

Paul B. Aamodt

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MEDTRONIC, INC.
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EXAMINER

LEE, CYNTHIA K

ART UNIT

PAPER NUMBER

1745

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

03/09/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/661,666

Applicant(s)

AAMODT, PAUL B.

Examiner

Cynthia Lee

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) 10-12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 13-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Amendment

This Office Action is responsive to the amendment filed on 12/05/2006. Claim 16 has been added. Claims 1-16 are pending. Claims 10-12 are withdrawn from further consideration as being drawn to a non-elected invention. Applicant's arguments have been considered, but are not persuasive. Thus, claims 1-9 and 13-16 are finally rejected for reasons of record.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-9 and 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kelm (US 486215) in view of Spillman (US 5631102).

Kelm discloses a separator subassembly for a coiled electrode-type electrochemical cell comprising an elongated separator layer. Kelm discloses that the anode assembly comprises an alkali metal, preferably lithium metal, and the current collector comprises a corrosion-resistant metal, preferably nickel, copper or an alloy of nickel and copper (4:20-25 and 35-40) (instant claims 8 and 9). Kelm discloses that the separator can be made of microporous polyolefin (i.e. polyethylene or polypropylene) separator material such as Celgard (5:1-5) (applicant's dielectric material, instant claim 13).

Kelm disclose that the separator assembly covers the anode assembly and forms a pocket around the anode assembly since it folds over (applicant's longitudinal crease, instant claim 5) at the top edge and conforms to the anode assembly until it reaches the bottom edge where it is joined to itself at a seal. Slits can be cut in the separator to allow the connector tabs to project through the separator (4:60-65) (instant claims 2, 6, 15).

Kelm does not disclose a spacer layer. However, Spillman teaches a separator insert (applicant's spacer layer) in addition to the main separator in an electrochemical cell. A preferred material for the separator insert is a woven or nonwoven fluoropolymer material (applicant's dielectric material). This polymeric material is chemically inert to the components used in alkali metal cells, is corrosion resistant and does not decompose at normal battery temperatures. Preferably, the separator insert covers at least each side of the cathode means in a spirally wound electrode stack and extends less than one-half the total length thereof. The separator insert covers the leading edge and at least one side of one of the electrodes in the cell. This provides additional protection against internal short circuit conditions due to tearing or puncture of the traditional separator caused by exposed electrode current collector screens (abstract, 2:30-35, 4:15-40, fig. 1). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to add the separator insert and cover the current collector as taught by Spillman to Kelm's anode or the cathode for the benefit of preventing short circuit caused by corrosion and puncturing at the current collector.

Spillman does not disclose that the spacer layer is relatively thicker than the separator layer (instant claim 3). However, it is obvious that in general, a thicker material is more robust and more resistant to the external forces. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the separator insert (applicant's spacer layer) thicker than the separator because Spillman teaches that the separator insert is useful to augment the main separator and what is important is that the separator insert provides additional protection against internal short circuit conditions due to tearing or puncture of the traditional or main separator by exposed electrode current collector screens (5:15-25). A thicker separator insert would provide the extra support in the leading current collector region while avoiding unnecessary mechanical enhancement in the main separator.

Regarding claims 4 and 13, Kelm and Spillman do not disclose that a portion of the separator layer approximately the size of the spacer layer is absent. However, the Examiner notes that it is an obvious variant of the combination of Kelm and Spillman. Either configuration achieves protection of the current collector. It would have been obvious to one of ordinary skill in the art at the time the invention was made replace an absent portion of the separator layer with a spacer layer should one decide to use a different, more robust material for the spacer material. In this case, the separator layer would not be necessary and the absence of the separator material would reduce weight of the battery. If a spacer layer were in place of the separator layer, a mechanical or a chemical bond would have to be present that bonds the two interfaces. Spillman's

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separator insert material is disposed along an edge of the separator (see fig. 1) (instant claim 14).

The combination of Kelm and Spillman would yield one spacer layer. Kelm and Spillman do not disclose that the separator assembly comprises at least two spacer layers (instant claim 7). However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to add multiple layers for the benefit of extra support and protection against puncture. Further, it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

Regarding claim 16, Kelm discloses that the anode can be on just one side of the current collector (see fig. 3) or both sides of the current collector (see fig. 2). In the case that both sides of the current collector has the anode metal, the Examiner is interpreting either side to read on Applicant's "an anode." Kelm modified by Spillman does not teach what side of the anode the space layer is placed. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to place the spacer layer on either side because Spillman teaches of reinforcing the separator to resist tearing or puncturing (2:30-33). Further, it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japikse*, 86 USPQ 70.

Response to Arguments

Applicant's arguments filed 12/05/2006 have been fully considered but they are not persuasive.

Applicant asserts that Spillman's separator insert is shown to be positioned around the cathode and is neither inserted in nor coupled to the separator that is sealed around an anode electrode. Applicant asserts that Spillman appears to be no more than an additional separator provided around the cathode electrode in addition to the separator provided around the anode. Applicant asserts that the notion that an added separator around an electrode is a separator subassembly including a "spacer insert coupled to the elongated separator" is an improper reading of the claim language.

The Examiner notes that this argument is not commensurate in scope with the claim language. Nowhere do the claims require that the spacer layer be a "spacer insert coupled to the elongated separator" (emphasis added) nor that the separator layer be inserted in the separator subassembly.

The Examiner notes that Applicants have not further structurally limited what is meant by "coupled" and thus, adding a separator insert to Kelm's separator assembly as rejected above reads on the instant claims despite Applicant's assertion that it does not. Further, either configurations of placing the separator insert inside or outside would achieve reinforced support of the separator and are obvious variants of each other.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within


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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cynthia Lee whose telephone number is 571-272-8699. The examiner can normally be reached on Monday-Friday 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


SUSY TSANG-FOSTER
PRIMARY EXAMINER